El Paso Natural Gas Company

El Paso, Texas

August 14, 1957

DIRECT REPLY TO:
P. O. BOX 997
FARMINGTON, NEW MEXICO

Mr. A. L. Porter
Secretary and Director
Oil Conservation Commission
Box 871
Santa Fe, New Mexico

Dear Sir:

This is a request for administrative approval for a well dually completed in the Blanco Mesa Verde Pool and in the South Blanco Pictured Cliffs Extension Pool. The El Paso Natural Gas Company Rincon Unit No. 97 (PM) is located 1650 feet from the South line, and 990 feet from the West line of Section 18, Township 27 North, Range 6 West, N.M.P.M., Rio Arriba County, New Mexico.

This well has been completed in the Point Lookout and Cliff House sections of the Mesa Verde formation and in the Pictured Cliffs formation. Completion has been accomplished in the following manner:

1. 10 3/4" surface casing set a 173 feet with 150 sacks of cement circulated to the surface.
2. 7 5 8" intermediate casing set at 3370 feet with 250 sacks of cement. Top of cement at 1940 feet, which is above the top of the Pictured Cliffs formation at 3180 feet.
3. 5 1/2" liner set from 3295 feet to 5661 feet with 300 sacks of cement.
4. The casing and liner were tested for leaks before perforating.
5. The Point Lookout section was perforated in five intervals and fractured with water and sand.
6. The Cliff House formation was perforated in two intervals and fractured with water and sand.
7. The Pictured Cliffs formation was perforated in one interval and fractured with water and sand.
8. All perforations were cleaned after treatment and completion was accomplished by setting a Baker Model EGJ production packer on 2 EUE tubing at 3339 feet with the tubing perforations set opposite the Point Lookout perforations. 1 1 4" Grade B [illegible] pipe was run, with the tubing perforations set opposite the [illegible] perforations, as a siphon string. The Point Lookout gas will be produced through the 2" EUE tubing and the Pictured Cliffs gas through the casing.

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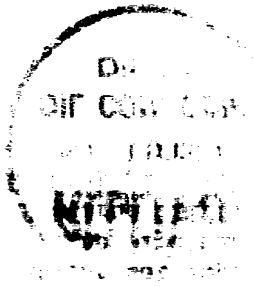


9. A Garrett circulating sleeve was installed in the 2" EUE tubing string just below the Pictured Cliffs perforations. This will enable the bottom hole pressure tests to be taken at a future date if so required.
10. Initial potential tests have been run and commercial production has been found in both zones. A packer leakage test has been run and witnessed by a member of the Aztec office of the Oil Conservation Commission. This test shows no communication in the well bore between the two producing formations.

Administrative approval is requested for the dual completion to allow production from both known producing formations, eleminating the high initial cost of drilling two separate wells.

The drilling block falls well within the boundries of the Rincon Unit, and since El Paso Natural Gas Company is the only operator of this unit the approval of any other operator for dually completing this well has not been sought. I am enclosing:

(a) Two copies of the schematic diagram of the mechanical installations.
(b) Two copies of the affidavit from the packer setting company stating that the packer used was set at the depth shown.
(c) Two copies of the packer leakage test as observed by a member of the Oil Conservation Commission.
(d) Two copies of the initial potential test showing commercial production from the two formations.

It is intended to dedicate the S/2 of Section 18, Township 27 North, Range 6 West, to the Mesa Verde formation and the SW 4 of Section 18, Township 27 North, Range 6 West, to the Pictured Cliffs formation.

Any further information required will be furnished upon your request. Thank you for your consideration in this matter.

Yours very truly,

ORIGINAL SIGNED E. J. COEL

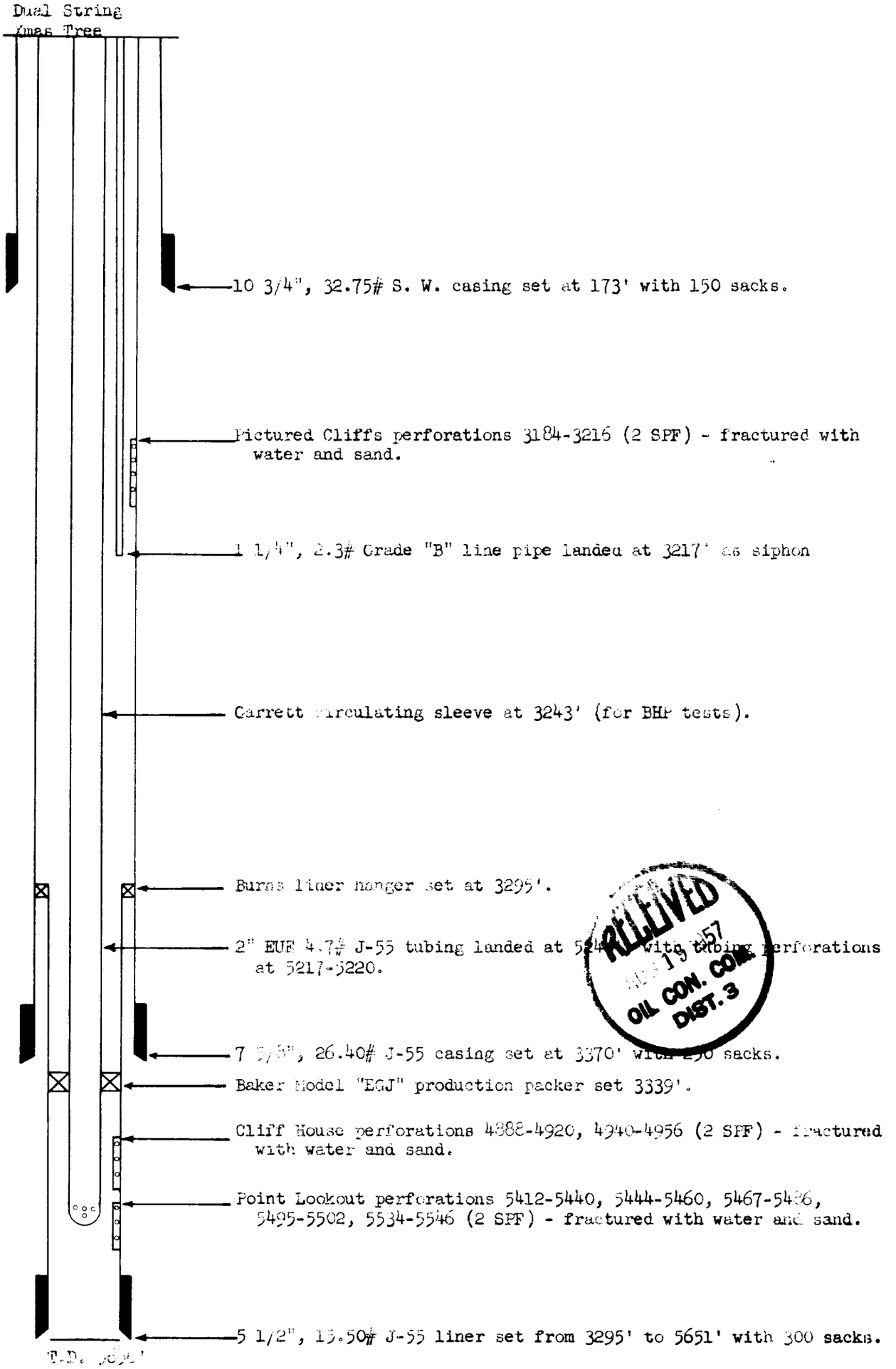
E. J. Coel
Senior Petroleum Engineer

EJC/dgb
Encl.
cc: Emery Arnold
R. L. Hamblin
Phil McGrath

ORIGINAL SIGNED E. J. COEL

SCHEMATIC DIAGRAM OF DUAL COMPLETION
EL PASO NATURAL GAS RINCON UNIT NO. 97 (PM)
(SW /4 Section 18, T-27-N, R-6-W)

Zero reference point 9.6'
above top flange of tubing hanger.



STATE OF NEW MEXICO)
)
COUNTY OF SAN JUAN)

I, Mack M. Mahaffey, being first duly sworn upon my oath depose and say as follows:

I am an employee of Baker Oil Tools, Inc., and that on July 9, 1957, I was called to the location of the El Paso Natural Gas Company Rincon Unit No. 97 (PM) Well located in the NWSW/4 of Section 18, Township 27 North, Range 6 West, N.M.P.M. for the purpose of installing a production packer. Under my direct supervision a Baker Model "EUJ" production packer was set at 3339 feet. The production packer was properly set in accordance with the usual practices and customs of the industry.

Mack M. Mahaffey

Subscribed and sworn to before me, a Notary Public in and for San Juan County, New Mexico, the 7 day of Aug, 1957.

Notary Public in and for San Juan County, New Mexico

My commission expires February 24, 1960.

EL PASO NATURAL GAS COMPANY

P. O. Box 997
Farmington, N.M.

August 2, 1957

Mr. E. C. Arnold
Oil Conservation Commission
120 East Chaco
Aztec, New Mexico

Re: Packer Leakage Test on the El Paso Natural Gas Company Well, Rincon Unit No. 97, SW Sec. 18-27-6, Rio Arriba County, New Mexico

Dear Mr. Arnold:

The subject well was dually completed in the Pictured Cliffs and Mesa Verde zones and a packer was set at 3339 feet. The Pictured Cliffs zone was tested through a 3/4" choke for three hours on July 18, 1957 and the following data obtained:

Pictured Cliffs SIPC - 1013 psig (shut-in 9 days)
Pictured Cliffs SIPT - 1013 psig
Mesa Verde SIPT - 1079 psig

Time	Flowing Casing Pressure	Mesa Verde SIPT	Temp °F
1:25	Opened casing	1079	
1:40	376	1078	54
1:55	258	1079	56
2:10	187	1079	59
2:25	155	1079	59
3:25	112	1079	62
4:25	95	1079	60

The choke volume for the Pictured Cliffs test was 1245 MCF/D with an A.O.F. of 1257 MCF/D. This well was shut-in for 14 days and the Mesa Verde zone was tested through a 3/4" choke for three hours with the following results:

Pictured Cliffs SIPC - 1050 psig
Pictured Cliffs SIPT - 1050 psig
Mesa Verde SIPT - 1088 psig (shut-in 23 days)

Form 23-24 (Rev. 5-56)

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

From: Gas Engineering Department

Date: August 1, 1957

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, RINCON UNIT NO. 97, Rio Arriba County, New Mexico.

Tested By: S. V. Roberts and Fred Cook, New Mexico Oil Conservation Commission.

Location ..... Sec. 18 T. 27N R. 6W 1650'S, 990'W

Shut-in Pressure ..... P.C. SIPC 1050 psig ; (Shut-in 14 days)
P.C. SIPT 1050 psig
M.V. SIPT 1088 psig

0.750" Choke Volume ..... 3547 MCF/D @ 14.7 psia and 60° F. for 0.6 gravity gas. Flow through tubing for 3 hours.

Calculated 3 Hour Absolute Open Flow ..... 4565 MCF/D

Working Pressure On ...Calculated... = 576 Psig

Producing Formation ..... Mesa Verde

Stimulation Method ..... Sand-Water Frac.

Total Depth ..... 5656 - c/o - 5570

Field ..... Blanco

H_2S ..... Sweet to lead acetate.

SIPT - P.C. - 1056 psig final.

Lewis D. Galloway
L. D. Galloway

cc: D. H. Tucker
~~R. W. Hicks~~
W. T. Hollis
~~C. O. Walker~~
W. M. Rodgers
~~Wayne Shook~~
Drilling Department
B. D. Adams
Roland Hamblin
Jack Purvis
~~W. V. Hoffk~~
C. C. Kennedy
E. J. Coel, Jr. (6)
A. J. Dudenhoeffer
File

Bill Parrish
H. H. Lines
Bill Parrish

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Time	Flowing Tubing Pressure	Pictured Cliffs SIPC	Temp °F
11:15	Opened tubing	1050	
11:30	484	1056	62
11:45	414	1056	62
12:00	380	1056	63
12:15	364	1056	63
1:15	308	1056	65
2:15	287	1056	66

The choke volume for the Mesa Verde test was 3547 MCF/D with an A.O.F. of 4565 MCF/D.

The above results indicate there is no packer leakage.

Yours very truly,

S. V. Roberts

S. V. Roberts
Gas Engineer

SVR/jla

cc: W. T. Hollis
W. M. Rodgers
E. J. Coel, Jr. (6)
File

FORM 23-75 (6-56)

EL PASO NATURAL GAS COMPANY

OPEN FLOW TEST DATA

DUAL COMPLETION

DATE August 1, 1957

Operator: El Paso Natural Gas Company		Lease: Rincon Unit No. 97	
Location: 1650'S, 990'W, Sec. 18-27-6		County: Rio Arriba	State: New Mexico
Formation: Mesa Verde		Pool: Blanco	
Casing: Diameter: 7-5/8"	Set At: Feet: 3358	Tubing: Diameter: 2"	Set At: Feet: 5244
Pay Zone: From: 4888	To: 5546	Total Depth: 5656 - c/o 5570	
Stimulation Method: Sand Water Frac.		Flow Through Casing:	Flow Through Tubing: X

Choke Size, Inches: 0.750	Choke Constant: C: 12.365	5-1/2" liner 3295 - 5651	
Shut-In Pressure, Casing: 1050 P.C. PSIG	· 12 = PSIA: 1062	Days Shut-In: 14	Shut-In Pressure, Tubing: 1088 MV PSIG · 12 = PSIA: 1100
Flowing Pressure: P: 287 PSIG	· 12 = PSIA: 299		Working Pressure: Pw: Calculated PSIG · 12 = PSIA: 588
Temperature: T: 66 °F	n: 0.75	Fpv (From Tables): 1.031	Gravity: 0.688

1-1/4" at 3208.. **Packer at** 3339 **Sleeve at** 3243. **SIPT PC - 1056 psig final.**

CHOKE VOLUME Q = $C \times P_t \times F_t \times F_g \times F_{pv}$

Q = 12.365 x 299 x .9943 x .9359 x 1.031 = 3547 MCF/D

OPEN FLOW Aof = $Q \left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$

Aof = $\left(\frac{1,210,000}{864,256} \right)^n$ $1.4000^{.75} \times 3547 = 1.2870 \times 3547$

Aof = 4565 MCF D

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TESTED BY S. V. Roberts

WITNESSED BY Mr. Fred Cook, New Mexico Oil Conservation Commission

cc: E. J. Coel, Jr.

L. D. Galloway

L. D. Galloway

Form 23-24 (Rev. 5-56)

EL PASO NATURAL GAS COMPANY
GAS WELL TEST

To: Mr. E. E. Alsup

From: Gas Engineering Department

Date: July 18, 1957

Place: Farmington, New Mexico

DUAL COMPLETION

Subject: Test data on the El Paso Natural Gas Company Well, RINCON UNIT NO. 97, Rio Arriba County, New Mexico.

Tested By: S. V. Roberts

Location ..... Sec. 18 T. 27N R. 6W 1650'S, 990'W

Shut-In Pressure ..... SIPC 1013 psig ; (Shut-in 9 days)
SIPT 1013 psig

0.750" Choke Volume ..... 1245 MCF/D @ 14.7 psia and 60° F. for 0.6 gravity gas. Flow through casing for 3 hours.

Calculated 3 Hour Absolute Open Flow ..... 1257 MCF/D

Working Pressure On tubing ..... = 97 Psig

Producing Formation ..... Pictured Cliffs

Stimulation Method ..... Sand Water Frac.

Total Depth ..... 5656 - c/o 5570

Field ..... Wildcat

H_2S ..... Sweet to lead acetate.

L. D. Galloway

L. D. Galloway

By: L. D. Galloway

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cc: D. H. Tucker
~~R. M. Harris~~
W. T. Hollis
~~G. G. Walker~~
W. M. Rodgers
~~Wayne Gibson~~
Drilling Department
B. D. Adams
Roland Hamblin
Jack Purvis
~~W. M. Hall~~
C. C. Kennedy
E. J. Coel, Jr. (6)
A. J. Dudenhoeffer
File

Bill Parrish
Dean Rittmann
H. H. Lines

FORM 23-75 (6-56)

EL PASO NATURAL GAS COMPANY

DUAL COMPLETION

OPEN FLOW TEST DATA

DATE July 18, 1957

Operator: El Paso Natural Gas Company		Lease: Rincon Unit No. 97	
Location: 1650'S, 990'W, Sec. 18-27-6		County: Rio Arriba	State: New Mexico
Formation: Pictured Cliffs		Pool: Wildcat	
Casing: Diameter: 7-5/8"	Set At: Feet: 3358	Tubing: Diameter: 1-1/4	Set At: Feet: 3208
Pay Zone: From: 3184	To: 3216	Total Depth: 5656 - c/o 5570	
Stimulation Method: Sand Water Frac.		Flow Through Casing: X	Flow Through Tubing:

Choke Size, Inches: 0.750		Choke Constant: C: 12.365		5-1/2" liner - 3295-5651	
Shut-In Pressure, Casing, PSIG: 1013 PC	+ 12 = PSIA: 1025	Days Shut-In: 9	Shut-In Pressure, Tubing PSIG: 1013 PC	+ 12 = PSIA: 1025	
Flowing Pressure: P PSIG: 95	+ 12 = PSIA: 107		Working Pressure: P_w PSIG: 97	+ 12 = PSIA: 109	
Temperature: T °F: 60	n: 0.85		Fpv (From Tables): 1.009	Gravity: 0.692	

SIPT (MV) - 1079 psig 2" at 5244. Packer at 3339. Sleeve at 3243

CHOKE VOLUME Q = C x P_t x F_t x F_g x F_{pv}

Q = 12.365 x 107 x 1.00 x .9325 x 1.009 = 1245 MCF/D

OPEN FLOW Aof Q = $\left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$

Aof = $\left(\frac{1,050,625}{1,038,744} \right)^n$ $1.0114^{.85}$ x 1245 = 1.0097 x 1245

Aof = 1257 MCF/D

RECEIVED
JUL 19 1957
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TESTED BY S. V. Roberts

WITNESSED BY

cc: E. J. Coel, Jr. (6)

L. D. Galloway

L. D. Galloway

By: R. L. Kendrick